SwissCut Special Hybrid Grade

Turning Negative - Metric

Date compiled **May 4 2017**

CNMA 1204..

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
K	Nodular Cast Iron	150	0.20	0.78	0.50	130	380	250	0.5	6.0	3.00
	Grey Cast Iron	150	0.20	0.80	0.50	130	390	260	0.5	6.0	3.00

CNMA 1606..

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
K	Nodular Cast Iron	150	0.15	0.68	0.40	130	380	250	2.0	8.0	3.0
	Grey Cast Iron	150	0.15	0.70	0.40	130	390	260	2.0	8.0	3.0

CNMG 1204..-BF

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.11	0.23	0.17	180	330	300	0.2	3.0	2.0
	Low Alloy	200	0.10	0.20	0.15	120	280	250	0.2	2.5	2.0
	High Alloy	220	0.09	0.18	0.14	70	190	170	0.2	2.5	2.0
M	Austenitic	190	0.10	0.18	0.14	170	270	250	0.2	2.5	2.0
	Ferritic	220	0.10	0.16	0.14	130	210	180	0.2	2.5	2.0
	Martensitic	40 Hc	0.08	0.16	0.12	80	150	110	0.2	2.5	1.5
K	Nodular Cast Iron	150	0.08	0.20	0.14	160	280	240	0.2	3.0	2.0
	Grey Cast Iron	150	0.08	0.20	0.14	170	280	240	0.2	3.0	2.0
S	Heat resistant and super alloys	240	0.09	0.15	0.12	25	50	35	0.2	2.0	2.0
H	Hardened material	45HRc	0.05	0.12	0.09	50	100	75	0.2	1.8	1.5

CNMG 1204..-BG

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.21	0.50	0.35	180	330	250	0.5	5.0	3.0
	Low Alloy	200	0.21	0.45	0.30	120	280	200	0.5	5.0	3.0
	High Alloy	220	0.18	0.40	0.25	70	190	130	0.5	4.0	2.5
M	Austenitic	190	0.20	0.40	0.30	170	270	220	0.5	5.0	3.0
	Ferritic	220	0.18	0.40	0.26	130	210	170	0.5	5.0	3.0
	Martensitic	40 Hc	0.16	0.36	0.24	90	150	120	0.5	4.0	2.5
K	Nodular Cast Iron	150	0.15	0.58	0.34	170	250	200	0.5	5.0	3.0
	Grey Cast Iron	150	0.15	0.60	0.35	170	250	210	0.5	5.0	3.0
S	Heat resistant and super alloys	240	0.20	0.35	0.28	25	50	38	0.5	3.0	2.0
H	Hardened material	45HRc	0.11	0.30	0.21	50	100	75	0.5	2.5	2.0

CNMG 1204..-BR

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.26	0.68	0.47	180	330	250	0.7	6.0	4.0
	Low Alloy	200	0.26	0.61	0.44	120	280	200	0.7	6.0	4.0
	High Alloy	220	0.23	0.54	0.39	70	190	130	0.7	4.8	3.4
M	Austenitic	190	0.25	0.54	0.40	170	270	220	0.7	6.0	4.0
	Ferritic	220	0.24	0.50	0.38	130	210	180	0.7	6.0	4.0
	Martensitic	40 Hc	0.22	0.48	0.34	90	150	120	0.7	5.0	3.5
K	Nodular Cast Iron	150	0.20	0.78	0.50	160	240	200	0.7	6.0	4.0
	Grey Cast Iron	150	0.20	0.81	0.51	170	250	210	0.7	6.0	4.0
S	Heat resistant and super alloys	240	0.25	0.47	0.36	25	45	35	0.7	3.6	2.7
H	Hardened material	45HRc	0.14	0.41	0.28	50	100	75	0.7	3.0	2.7

DNMG 1104..-BF

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.11	0.23	0.17	180	330	300	0.2	3.0	2.0
	Low Alloy	200	0.10	0.20	0.15	120	280	250	0.2	2.5	2.0
	High Alloy	220	0.09	0.18	0.14	70	190	170	0.2	2.5	2.0
M	Austenitic	190	0.10	0.18	0.14	170	270	250	0.2	2.5	2.0
	Ferritic	220	0.10	0.18	0.14	130	200	170	0.2	2.5	2.0
	Martensitic	40 Hc	0.08	0.16	0.12	90	140	110	0.2	2.0	1.5
K	Nodular Cast Iron	150	0.08	0.20	0.14	160	240	230	0.2	3.0	2.0
	Grey Cast Iron	150	0.08	0.20	0.14	170	250	240	0.2	3.0	2.0
S	Heat resistant and super alloys	240	0.09	0.15	0.12	25	50	35	0.2	2.0	2.0
H	Hardened material	45HRc	0.05	0.12	0.09	50	100	75	0.2	1.8	1.5

DNMG 1104..-BG

Material			Cutting conditions

Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.21	0.50	0.35	180	330	250	0.5	5.0	3.0
	Low Alloy	200	0.21	0.45	0.30	120	280	200	0.5	5.0	3.0
	High Alloy	220	0.18	0.40	0.25	70	190	130	0.5	4.0	2.5
M	Austenitic	190	0.20	0.40	0.30	170	270	220	0.5	5.0	3.0
	Ferritic	220	0.20	0.38	0.30	130	200	170	0.5	5.0	3.0
	Martensitic	40 Hc	0.18	0.36	0.26	90	140	110	0.5	4.0	2.5
K	Nodular Cast Iron	150	0.15	0.58	0.34	160	240	200	0.5	5.0	3.0
	Grey Cast Iron	150	0.15	0.60	0.35	170	250	210	0.5	5.0	3.0
S	Heat resistant and super alloys	240	0.20	0.35	0.28	25	50	38	0.5	3.0	2.0
H	Hardened material	45HRc	0.11	0.30	0.21	50	100	75	0.5	2.5	2.0

DNMG 1504..-BF

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.11	0.23	0.19	180	330	290	0.2	3.0	2.0
	Low Alloy	200	0.10	0.20	0.14	120	280	250	0.2	2.5	2.0
	High Alloy	220	0.09	0.18	0.13	70	190	170	0.2	2.5	2.0
M	Austenitic	190	0.10	0.18	0.14	170	270	240	0.2	2.5	2.0
	Ferritic	220	0.10	0.16	0.14	130	200	170	0.2	2.5	2.0
	Martensitic	40 Hc	0.08	0.14	0.12	90	140	110	0.2	2.5	1.5
K	Nodular Cast Iron	150	0.08	0.20	0.18	160	240	220	0.2	3.0	2.0
	Grey Cast Iron	150	0.08	0.20	0.18	170	250	240	0.2	3.0	2.0
S	Heat resistant and super alloys	240	0.09	0.15	0.12	25	50	40	0.2	2.0	2.0
H	Hardened material	45HRc	0.05	0.12	0.10	50	100	75	0.2	2.0	1.5

DNMG 1504..-BG

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.21	0.50	0.36	180	330	250	0.5	5.0	3.0
	Low Alloy	200	0.21	0.45	0.33	120	280	200	0.5	5.0	3.0
	High Alloy	220	0.18	0.40	0.29	70	190	130	0.5	4.0	2.5
M	Austenitic	190	0.20	0.40	0.30	170	270	220	0.5	5.0	3.0
	Ferritic	220	0.20	0.38	0.28	130	200	170	0.5	5.0	3.0
	Martensitic	40 Hc	0.18	0.34	0.24	90	140	110	0.5	4.0	2.5
K	Nodular Cast Iron	150	0.15	0.58	0.36	160	240	200	0.5	5.0	3.0
	Grey Cast Iron	150	0.15	0.60	0.38	170	250	210	0.5	5.0	3.0
S	Heat resistant and super alloys	240	0.20	0.35	0.28	25	45	35	0.5	3.0	2.0
H	Hardened material	45HRc	0.11	0.30	0.21	50	100	75	0.5	2.5	2.0

DNMG 1506..-BF

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.11	0.23	0.19	180	330	290	0.2	3.0	2.0
	Low Alloy	200	0.10	0.20	0.14	120	280	250	0.2	2.5	2.0
	High Alloy	220	0.09	0.18	0.13	70	190	170	0.2	2.5	2.0
M	Austenitic	190	0.10	0.18	0.14	170	270	240	0.2	2.5	2.0
	Ferritic	220				130	200	170	0.2	2.5	2.0
	Martensitic	40 Hc				90	140	110	0.2	2.0	1.6
K	Nodular Cast Iron	150	0.08	0.20	0.18	160	240	220	0.2	3.0	2.0
	Grey Cast Iron	150	0.08	0.20	0.18	170	250	240	0.2	3.0	2.0
S	Heat resistant and super alloys	240	0.09	0.15	0.12	25	50	40	0.2	2.0	2.0
H	Hardened material	45HRc	0.05	0.12	0.10	50	100	75	0.2	2.0	1.5

DNMG 1506..-BG

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.21	0.50	0.36	180	330	250	0.5	5.0	3.0
	Low Alloy	200	0.21	0.45	0.33	120	280	200	0.5	5.0	3.0
	High Alloy	220	0.18	0.40	0.29	70	190	130	0.5	4.0	2.5
M	Austenitic	190	0.20	0.40	0.30	170	270	220	0.5	5.0	3.0
	Ferritic	220	0.20	0.38	0.28	130	200	170	0.5	5.0	3.0
	Martensitic	40 Hc	0.18	0.34	0.26	90	140	110	0.5	4.0	2.5
K	Nodular Cast Iron	150	0.14	0.58	0.36	160	240	200	0.5	5.0	3.0
	Grey Cast Iron	150	0.15	0.60	0.38	170	250	210	0.5	5.0	3.0
S	Heat resistant and super alloys	240	0.20	0.35	0.28	25	45	35	0.5	3.0	2.0
H	Hardened material	45HRc	0.11	0.30	0.21	50	100	75	0.5	2.5	2.0

DNMG 1506..-BR

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.26	0.68	0.47	180	330	250	0.7	6.0	4.0
	Low Alloy	200	0.26	0.61	0.44	120	280	200	0.7	6.0	4.0
	High Alloy	220	0.23	0.54	0.39	70	190	130	0.7	4.8	3.4

M	Austenitic	190	0.25	0.54	0.40	170	270	220	0.7	6.0	4.0
	Ferritic	220	0.25	0.52	0.38	130	200	170	0.7	6.0	4.0
	Martensitic	40 Hc	0.22	0.48	0.34	90	140	110	0.7	4.5	3.0
K	Nodular Cast Iron	150	0.20	0.76	0.48	160	240	200	0.7	6.0	4.0
	Grey Cast Iron	150	0.20	0.80	0.50	170	250	210	0.7	6.0	4.0
S	Heat resistant and super alloys	240	0.25	0.47	0.36	25	45	35	0.7	3.6	2.7
H	Hardened material	45HRc	0.14	0.41	0.28	50	100	75	0.7	3.0	2.7

DNUX 1506.. R/L

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.21	0.50	0.35	180	330	220	0.5	5.0	3.0
	Low Alloy	200	0.21	0.45	0.32	120	250	180	0.5	4.0	3.0
	High Alloy	220	0.18	0.40	0.30	70	150	120	0.5	4.0	2.5
M	Austenitic	190	0.20	0.40	0.36	170	270	190	0.5	5.0	3.0
	Ferritic	220	0.20	0.38	0.34	130	200	170	0.5	5.0	3.0
	Martensitic	40 Hc	0.18	0.38	0.30	90	140	110	0.5	4.0	2.5
K	Nodular Cast Iron	150	0.15	0.58	0.34	160	240	200	0.5	5.0	3.0
	Grey Cast Iron	150	0.15	0.60	0.35	170	250	200	0.5	5.0	3.0
S	Heat resistant and super alloys	240	0.20	0.35	0.28	25	45	32	0.5	3.0	2.0
H	Hardened material	45HRc	0.11	0.30	0.25	50	100	80	0.5	2.5	2.0

KNUX 1604.. R/L

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.11	0.23	0.18	180	330	260	0.2	4.2	3.0
	Low Alloy	200	0.10	0.20	0.15	120	250	240	0.2	4.2	3.0
	High Alloy	220	0.09	0.16	0.56	70	150	140	0.2	4.2	2.0
M	Austenitic	190	0.10	0.18	0.15	170	270	260	0.2	4.2	3.0
	Ferritic	220	0.10	0.18	0.15	130	200	170	0.2	4.2	3.0
	Martensitic	40 Hc	0.10	0.16	0.15	90	140	110	0.2	3.6	2.4
K	Nodular Cast Iron	150	0.08	0.20	0.18	160	240	220	0.2	5.0	3.0
	Grey Cast Iron	150	0.08	0.20	0.18	170	250	240	0.2	5.0	3.0
S	Heat resistant and super alloys	240	0.09	0.15	0.12	25	50	40	0.2	3.3	2.0
H	Hardened material	45HRc	0.05	0.12	0.11	50	100	90	0.2	3.0	1.8

SNMA 1204..

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
K	Nodular Cast Iron	150	0.15	0.76	0.34	130	380	250	1.0	6.0	2.5
	Grey Cast Iron	150	0.15	0.80	0.35	130	390	260	1.0	6.0	2.5

SNMG 1204..-BF

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.30	0.70	0.55	180	330	250	0.2	4.0	2.1
	Low Alloy	200	0.30	0.63	0.47	120	280	200	0.2	4.0	2.1
	High Alloy	220	0.25	0.56	0.40	70	190	130	0.2	3.0	1.6
M	Austenitic	190	0.28	0.56	0.42	170	270	220	0.2	4.0	2.1
	Ferritic	220	0.26	0.52	0.40	130	200	170	0.2	4.0	2.1
	Martensitic	40 Hc	0.22	0.48	0.36	90	140	110	0.2	3.5	1.8
K	Nodular Cast Iron	150	0.20	0.80	0.52	160	240	200	0.2	4.0	2.1
	Grey Cast Iron	150	0.21	0.84	0.53	170	250	210	0.2	4.0	2.1
S	Heat resistant and super alloys	240	0.28	0.49	0.39	25	45	35	0.2	2.0	1.1
H	Hardened material	45HRc	0.16	0.42	0.29	50	100	75	0.2	2.0	1.1

SNMG 1204..-BG

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.30	0.70	0.50	180	330	250	0.5	5.0	3.0
	Low Alloy	200	0.30	0.63	0.47	120	280	200	0.5	5.0	3.0
	High Alloy	220	0.25	0.56	0.40	70	190	130	0.5	4.0	2.5
M	Austenitic	190	0.28	0.56	0.42	170	270	220	0.5	5.0	3.0
	Ferritic	220	0.26	0.52	0.38	130	200	170	0.5	5.0	3.0
	Martensitic	40 Hc	0.22	0.48	0.34	90	140	110	0.5	4.0	2.5
K	Nodular Cast Iron	150	0.20	0.80	0.52	160	240	200	0.5	5.0	3.0
	Grey Cast Iron	150	0.21	0.84	0.53	170	250	210	0.5	5.0	3.0
S	Heat resistant and super alloys	240	0.28	0.49	0.39	25	45	35	0.5	3.0	2.0
H	Hardened material	45HRc	0.16	0.42	0.29	50	100	75	0.5	2.5	2.0

SNMG 1204..-BR

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.37	0.95	0.65	180	330	250	0.7	6.0	4.0

	Low Alloy	200	0.37	0.86	0.60	120	280	200	0.7	6.0	4.0
	High Alloy	220	0.32	0.76	0.54	70	190	130	0.7	4.8	3.4
M	Austenitic	190	0.35	0.76	0.56	170	270	220	0.7	6.0	4.0
M	Ferritic	220	0.32	0.72	0.52	130	200	170	0.7	6.0	4.0
M	Martensitic	40 Hc	0.30	0.70	0.44	90	140	110	0.7	5.0	3.5
K	Nodular Cast Iron	150	0.28	1.10	0.70	160	240	200	0.7	6.0	4.0
K	Grey Cast Iron	150	0.30	1.14	0.70	170	250	210	0.7	6.0	4.0
S	Heat resistant and super alloys	240	0.35	0.67	0.51	25	45	35	0.7	3.6	2.7
H	Hardened material	45HRc	0.19	0.57	0.38	50	100	75	0.7	3.0	2.7

TNMA 1604..

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
K	Nodular Cast Iron	150	0.15	0.48	0.32	130	370	250	1.0	4.5	2.50
K	Grey Cast Iron	150	0.15	0.50	0.35	130	390	260	1.0	4.5	2.50

TNMG 1604..-BF

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.11	0.23	0.17	180	330	300	0.2	3.0	2.0
P	Low Alloy	200	0.10	0.20	0.15	120	280	250	0.2	2.5	2.0
P	High Alloy	220	0.09	0.18	0.14	70	190	170	0.2	2.5	2.0
M	Austenitic	190	0.10	0.18	0.14	170	270	250	0.2	2.5	2.0
M	Ferritic	220	0.10	0.16	0.14	130	200	170	0.2	2.5	2.0
M	Martensitic	40 Hc	0.10	0.16	0.12	90	140	110	0.2	2.0	1.5
K	Nodular Cast Iron	150	0.08	0.20	0.14	160	240	220	0.2	3.0	2.0
K	Grey Cast Iron	150	0.08	0.20	0.14	170	250	240	0.2	3.0	2.0
S	Heat resistant and super alloys	240	0.09	0.15	0.12	25	50	35	0.2	2.0	2.0
H	Hardened material	45HRc	0.05	0.12	0.09	50	100	75	0.2	1.8	1.5

TNMG 1604..-BG

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.21	0.50	0.35	180	330	250	0.5	5.0	3.0
P	Low Alloy	200	0.21	0.45	0.33	120	280	200	0.5	5.0	3.0
P	High Alloy	220	0.18	0.40	0.29	70	190	130	0.5	4.0	2.5
M	Austenitic	190	0.20	0.40	0.30	170	270	220	0.5	5.0	3.0
M	Ferritic	220	0.20	0.36	3.00	130	200	170	0.5	5.0	3.0
M	Martensitic	40 Hc	0.20	0.34	0.26	90	140	110	0.5	4.0	2.5
K	Nodular Cast Iron	150	0.14	0.58	0.36	160	240	200	0.5	5.0	3.0
K	Grey Cast Iron	150	0.15	0.60	0.38	170	250	210	0.5	5.0	3.0
S	Heat resistant and super alloys	240	0.20	0.35	0.28	25	45	35	0.5	3.0	2.0
H	Hardened material	45HRc	0.11	0.30	0.21	50	100	75	0.5	2.5	2.0

TNMG 1604..-BR

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.26	0.68	0.47	180	330	250	0.7	5.0	4.0
P	Low Alloy	200	0.26	0.61	0.44	120	280	200	0.7	5.0	4.0
P	High Alloy	220	0.23	0.54	0.39	70	190	130	0.7	4.0	3.4
M	Austenitic	190	0.25	0.54	0.40	170	270	220	0.7	5.0	4.0
M	Ferritic	220	0.25	0.52	0.38	130	200	170	0.7	5.0	4.0
M	Martensitic	40 Hc	0.25	0.46	0.36	90	140	110	0.7	4.0	3.5
K	Nodular Cast Iron	150	0.16	0.68	0.34	160	240	200	0.7	5.0	4.0
K	Grey Cast Iron	150	0.20	0.80	0.50	170	250	210	0.7	5.0	4.0
S	Heat resistant and super alloys	240	0.25	0.47	0.36	25	45	35	0.7	3.0	2.7
H	Hardened material	45HRc	0.14	0.41	0.28	50	100	75	0.7	2.5	2.2

TNMG 2204..-BF

Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.11	0.23	0.17	180	330	300	0.2	3.0	2.0
P	Low Alloy	200	0.10	0.20	0.15	120	280	250	0.2	2.5	2.0
P	High Alloy	220	0.09	0.18	0.14	70	190	170	0.2	2.5	2.0
M	Austenitic	190	0.10	0.18	0.14	170	270	250	0.2	2.5	2.0
M	Ferritic	220	0.10	0.16	0.14	130	200	170	0.2	2.5	2.0
M	Martensitic	40 Hc	0.08	0.16	0.12	90	140	110	0.2	2.0	1.5
K	Nodular Cast Iron	150	0.08	0.20	0.14	160	240	220	0.2	3.0	2.0
K	Grey Cast Iron	150	0.08	0.20	0.14	170	250	240	0.2	3.0	2.0
S	Heat resistant and super alloys	240	0.09	0.15	0.12	25	50	35	0.2	2.0	2.0
H	Hardened material	45HRc	0.05	0.12	0.09	50	100	75	0.2	1.8	1.5

TNMG 2204..-BG

Material			Cutting conditions								
Group	Sub Group	Hardness	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		

Group	Sub Group	(HB)	Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.21	0.50	0.36	180	330	250	0.5	7.0	3.0
	Low Alloy	200	0.21	0.45	0.33	120	280	200	0.5	7.0	3.0
	High Alloy	220	0.18	0.40	0.29	70	190	130	0.5	5.6	2.5
M	Austenitic	190	0.20	0.40	0.30	170	270	200	0.5	7.0	3.0
	Ferritic	220	0.20	0.38	0.30	130	200	170	0.5	7.0	3.0
	Martensitic	40 Hc	0.16	0.34	0.26	90	140	110	0.5	5.0	2.5
K	Nodular Cast Iron	150	0.16	0.58	0.36	160	240	200	0.5	7.0	3.0
	Grey Cast Iron	150	0.16	0.60	0.38	170	250	210	0.5	7.0	3.0
S	Heat resistant and super alloys	240	0.20	0.35	0.28	25	45	35	0.5	4.2	2.0
H	Hardened material	45HRc	0.11	0.30	0.21	50	100	75	0.5	3.5	2.0

TNMG 2204..-BR											
Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.26	0.68	0.45	180	330	250	0.7	7.0	4.0
	Low Alloy	200	0.26	0.61	0.40	120	280	200	0.7	7.0	4.0
	High Alloy	220	0.23	0.54	0.39	70	190	130	0.7	5.6	3.4
M	Austenitic	190	0.25	0.54	0.40	170	270	180	0.7	7.0	4.0
	Ferritic	220	0.24	0.50	0.38	130	200	170	0.7	7.0	4.0
	Martensitic	40 Hc	0.20	0.44	0.32	90	140	110	0.5	6.0	3.5
K	Nodular Cast Iron	150	0.20	0.76	0.48	160	240	200	0.7	7.0	4.0
	Grey Cast Iron	150	0.20	0.80	0.50	170	250	210	0.7	7.0	4.0
S	Heat resistant and super alloys	240	0.25	0.47	0.36	25	45	35	0.7	4.2	2.7
H	Hardened material	45HRc	0.14	0.41	0.28	50	100	75	0.7	3.5	2.2

TNUX 160404 R/L											
Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.11	0.23	0.17	180	330	300	0.2	3.0	2.0
	Low Alloy	200	0.10	0.20	0.15	120	280	250	0.2	2.5	2.0
	High Alloy	220	0.09	0.18	0.14	70	190	170	0.2	2.5	2.0
M	Austenitic	190	0.10	0.18	0.14	170	270	250	0.2	2.5	2.0
	Ferritic	220	0.10	0.16	0.14	130	200	170	0.2	2.5	2.0
	Martensitic	40 Hc	0.08	0.16	0.12	90	140	110	0.2	2.0	1.5
K	Nodular Cast Iron	150	0.08	0.20	0.14	160	240	220	0.2	3.0	2.0
	Grey Cast Iron	150	0.08	0.20	0.14	170	250	240	0.2	3.0	2.0
S	Heat resistant and super alloys	240	0.09	0.15	0.12	25	50	35	0.2	2.0	2.0
H	Hardened material	45HRc	0.05	0.12	0.09	50	100	75	0.2	1.8	1.5

TNUX 160408 R/L											
Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.21	0.50	0.36	180	330	255	0.5	5.0	3.0
	Low Alloy	200	0.21	0.45	0.33	120	280	200	0.5	5.0	3.0
	High Alloy	220	0.18	0.40	0.29	70	190	130	0.5	4.0	2.5
M	Austenitic	190	0.20	0.40	0.30	170	270	220	0.5	5.0	3.0
	Ferritic	220	0.20	0.38	0.28	130	200	170	0.5	5.0	3.0
	Martensitic	40 Hc	0.16	0.34	0.24	90	140	110	0.5	4.0	2.5
K	Nodular Cast Iron	150	0.14	0.58	0.36	160	240	200	0.5	5.0	3.0
	Grey Cast Iron	150	0.16	0.60	0.38	170	250	210	0.5	5.0	3.0
S	Heat resistant and super alloys	240	0.20	0.35	0.28	25	45	35	0.5	3.0	2.0
H	Hardened material	45HRc	0.11	0.30	0.21	50	100	75	0.5	2.5	2.0

VNMG 1604..-BF											
Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.11	0.23	0.17	180	330	300	0.2	3.0	2.0
	Low Alloy	200	0.10	0.20	0.15	120	280	250	0.2	2.5	2.0
	High Alloy	220	0.09	0.18	0.14	70	190	170	0.2	2.5	2.0
M	Austenitic	190	0.10	0.18	0.14	170	270	250	0.2	2.5	2.0
	Ferritic	220	0.10	0.18	0.14	130	200	170	0.2	2.5	2.0
	Martensitic	40 Hc	0.08	0.16	0.12	90	140	120	0.2	2.0	1.5
K	Nodular Cast Iron	150	0.08	0.20	0.12	160	240	220	0.2	3.0	2.0
	Grey Cast Iron	150	0.08	0.20	0.14	170	250	240	0.2	3.0	2.0
S	Heat resistant and super alloys	240	0.09	0.15	0.12	25	50	35	0.2	2.0	2.0
H	Hardened material	45HRc	0.05	0.12	0.09	50	100	75	0.2	1.8	1.5

VNMG 1604..-BG											
Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.19	0.40	0.30	180	330	250	0.5	4.0	2.7
	Low Alloy	200	0.19	0.36	0.28	120	280	200	0.5	4.0	2.7
	High Alloy	220	0.16	0.32	0.24	70	190	130	0.5	3.2	2.3
	Austenitic	190	0.18	0.32	0.25	170	270	200	0.5	4.0	2.7

M	Ferritic	220	0.18	0.32	0.24	130	200	170	0.5	4.0	2.7
	Martensitic	40 Hc	0.16	0.28	0.20	90	140	110	0.5	3.5	2.5
K	Nodular Cast Iron	150	0.14	0.38	0.24	160	240	200	0.5	4.0	2.7
	Grey Cast Iron	150	0.14	0.48	0.31	170	250	210	0.5	4.0	2.7
S	Heat resistant and super alloys	240	0.18	0.28	0.23	25	45	35	0.5	2.4	2.0
H	Hardened material	45HRc	0.10	0.24	0.17	50	100	75	0.5	2.0	1.8

VNMG 1604..-BR											
Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.19	0.40	0.30	180	330	250	1.5	4.0	2.7
	Low Alloy	200	0.19	0.36	0.28	120	280	200	1.5	4.0	2.7
	High Alloy	220	0.16	0.32	0.24	70	190	130	1.5	3.2	2.3
M	Austenitic	190	0.18	0.32	0.25	170	270	200	1.5	4.0	2.7
	Ferritic	220	0.18	0.30	0.25	130	210	160	1.5	4.0	2.7
	Martensitic	40 Hc	0.16	0.26	0.22	90	140	110	1.5	3.5	2.5
K	Nodular Cast Iron	150	0.14	0.46	0.30	160	240	200	1.5	4.0	2.7
	Grey Cast Iron	150	0.14	0.48	0.31	170	250	210	1.5	4.0	2.7
S	Heat resistant and super alloys	240	0.18	0.28	0.23	25	45	35	1.5	2.4	2.0
H	Hardened material	45HRc	0.10	0.24	0.17	50	100	75	1.5	2.0	1.8

WNMA 0804..											
Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
K	Nodular Cast Iron	150	0.20	0.76	0.32	130	380	250	0.7	6.0	2.00
	Grey Cast Iron	150	0.20	0.78	0.32	130	390	260	0.7	6.0	2.00

WNMG 0604..-BF											
Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.11	0.23	0.17	180	330	300	0.2	3.0	2.0
	Low Alloy	200	0.10	0.20	0.15	120	280	250	0.2	2.5	2.0
	High Alloy	220	0.09	0.18	0.14	70	190	170	0.2	2.5	2.0
M	Austenitic	190	0.10	0.18	0.14	170	270	250	0.2	2.5	2.0
	Ferritic	220	0.10	0.16	0.14	130	200	170	0.2	2.5	2.0
	Martensitic	40 Hc	0.08	0.16	0.12	90	150	120	0.2	2.5	2.0
K	Nodular Cast Iron	150	0.08	0.20	0.14	160	240	220	0.2	3.0	2.0
	Grey Cast Iron	150	0.08	0.20	0.14	170	250	240	0.2	3.0	2.0
S	Heat resistant and super alloys	240	0.09	0.15	0.12	25	50	35	0.2	2.0	2.0
H	Hardened material	45HRc	0.05	0.12	0.09	50	100	75	0.2	1.8	1.5

WNMG 0604..-BG											
Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.21	0.50	0.36	180	330	250	0.5	2.5	2.2
	Low Alloy	200	0.21	0.45	0.33	120	280	200	0.5	2.5	2.2
	High Alloy	220	0.18	0.40	0.29	70	190	130	0.5	2.0	1.8
M	Austenitic	190	0.20	0.40	0.30	170	270	200	0.5	2.5	2.2
	Ferritic	220	0.18	0.38	0.28	130	200	170	0.5	2.5	2.2
	Martensitic	40 Hc	0.16	0.34	0.24	90	140	120	0.5	2.0	1.5
K	Nodular Cast Iron	150	0.14	0.58	0.36	160	240	200	0.5	2.5	2.2
	Grey Cast Iron	150	0.15	0.60	0.38	170	250	210	0.5	2.5	2.2
S	Heat resistant and super alloys	240	0.20	0.35	0.28	25	45	30	0.5	1.5	1.5
H	Hardened material	45HRc	0.11	0.30	0.21	50	100	70	0.5	1.6	1.5

WNMG 0804..-BF											
Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.11	0.23	0.17	180	330	300	0.2	3.0	2.0
	Low Alloy	200	0.10	0.20	0.15	120	280	250	0.2	2.5	2.0
	High Alloy	220	0.09	0.18	0.14	70	190	170	0.2	2.5	2.0
M	Austenitic	190	0.10	0.18	0.14	170	270	250	0.2	2.5	2.0
	Ferritic	220	0.10	0.16	0.14	130	200	170	0.2	2.5	2.0
	Martensitic	40 Hc	0.08	0.16	0.12	90	140	120	0.2	2.0	1.5
K	Nodular Cast Iron	150	0.08	0.20	0.14	160	240	220	0.2	3.0	2.0
	Grey Cast Iron	150	0.08	0.20	0.14	170	250	240	0.2	3.0	2.0
S	Heat resistant and super alloys	240	0.09	0.15	0.12	25	50	35	0.2	2.0	2.0
H	Hardened material	45HRc	0.05	0.12	0.09	50	100	75	0.2	1.8	1.5

WNMG 0804..-BG											
Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.21	0.50	0.36	180	330	250	0.5	3.5	2.4
	Low Alloy	200	0.21	0.45	0.33	120	280	200	0.5	3.5	2.4

	High Alloy	220	0.18	0.40	0.29	70	190	130	0.5	2.8	2.0
M	Austenitic	190	0.20	0.40	0.30	170	270	200	0.5	3.5	2.4
	Ferritic	220	0.18	0.38	0.28	130	200	170	0.5	3.5	2.4
	Martensitic	40 Hc	0.16	0.34	0.24	90	140	120	0.5	3.0	2.0
K	Nodular Cast Iron	150	0.15	0.58	0.36	160	240	200	0.5	3.5	2.4
	Grey Cast Iron	150	0.15	0.60	0.38	170	250	210	0.5	3.5	2.4
S	Heat resistant and super alloys	240	0.20	0.35	0.28	25	45	30	0.5	2.1	1.6
H	Hardened material	45HRc	0.11	0.30	0.21	50	100	70	0.5	1.8	1.6

WNMG 0804..-BR											
Material			Cutting conditions								
Group	Sub Group	Hardness (HB)	Feed (mm/rev)			Speed Vc (m/min)			Depth Of Cut (mm)		
			Min	Max	Recommend	Min	Max	Recommend	Min	Max	Recommend
P	Non Alloy	120	0.25	0.65	0.45	180	330	250	0.7	3.5	3.0
	Low Alloy	200	0.25	0.59	0.40	120	280	200	0.7	3.5	3.0
	High Alloy	220	0.22	0.52	0.35	70	190	130	0.7	2.8	2.5
M	Austenitic	190	0.24	0.52	0.35	170	270	200	0.7	3.5	3.0
	Ferritic	220	0.24	0.48	0.34	130	200	170	0.7	3.5	3.0
	Martensitic	40 Hc	0.20	0.46	0.28	90	140	120	0.7	3.0	2.5
K	Nodular Cast Iron	150	0.18	0.74	0.42	160	240	200	0.7	3.5	3.0
	Grey Cast Iron	150	0.18	0.78	0.45	170	250	210	0.7	3.5	3.0
S	Heat resistant and super alloys	240	0.24	0.46	0.35	25	45	30	0.7	2.1	2.0
H	Hardened material	45HRc	0.13	0.39	0.25	50	100	70	0.7	1.8	2.0